DOCUMENT RESUME

ED 184 297 FL 010 685

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TITLE An Historical Overview of Second Language Acquisition Research.
PUB DATE Feb 77
NOTE 15p.; Paper presented at the Los Angeles Second Language Research Forum (1st, Los Angeles, CA, February 11-13, 1977). Tables may be marginally legible. Best copy available.

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adult Learning; Child Language; Comparative Analysis; *Discourse Analysis; Interference (Language); *Language Acquisition; *Language Research; *Linguistic Theory; Longitudinal Studies; Morphemes; Observation; Psycholinguistics; *Research Methodology; *Second Language Learning; Transfer of Training

ABSTRACT

An historical overview of research on second language acquisition considers research topics examined in observational/longitudinal studies and experimental studies. The questions that have reappeared across both observational and experimental studies concern: (1) whether second language learning is the same or different from first language learning, (2) the importance of interference/transfer, and (3) whether there is an optimal age effect for success in second language learning. Several explanations are noted for similar patterns emerging in the acquisition/production of both first and second language learners. If one accepts the proposition that there are strong similarities between first and second language learning, a second area of analysis is the role the first language has in second language learning. Contrastive analysis studies have been conducted to examine differences between first and second languages in order to predict where errors would be committed. The mechanisms of interference and transfer between the first and second languages have been the topic of debate. The conversational analysis approach has been utilized to investigate an optimal age for language learning. It is suggested that the whole area of adult learner conversation needs much more exploration before strong claims can be made about discourse analysis as an explanation for adult vs. child success in second language learning. (SW)

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AN HISTORICAL OVERVIEW OF SECOND LANGUAGE ACQUISITION RESEARCH [1]

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Over thirty years ago at a meeting of the Linguistics Society in Ann Arbor, Professor Werner Leopold issued a call to linguists for serious study of child language and infant bilingualism:

> We have studied language and languages of every conceivable type, standard languages, dialects, languages not written, languages of special groups with ever varying methods, throwing light into every nook and cranny of the speaking activity. Why then should just child language, which is uncontestably a province of language, be outside the pale of linguistic inquiry? (1945,9)

Since that time, the field of child language (a term, by the way, which originated with Dr. Leopold) has grown year by year to become one of the most important areas of linguistic research. The child language bibliography includes hundreds of studies, many of them based on Professor Leopold's work--Breyna Moskowitz' in phonology, Eve Clark's on semantic feature analysis, and Pat Greenfield's work in early syntactic development, to name but a few.

But from Dr. Leopold's call of 1945 until the early 1970's, no one in this country seemed to consider second language acquisition (either simultaneous acquisition of two languages or sequential acquisition) of importance to our understanding of either verbal learning or verbal behavior. Aside from Dr. Leopold's classic in the field, his study of his daughter's simultaneous acquisition of English and German, little of interest was accomplished. The Murrell and Burling studies were the only careful studies of that period.

A great deal of speculative thinking about second language acquisition was, of course, published during this period. Interesting as all these theoretical papers were, without careful studies of second language acquisition, they could only be speculative. Nothing certain could be said until second language acquisition had been studied in tangible case histories or until empirical evidence had been obtained.

It has taken us the thirty years since Professor Leopold made his plea to begin to realize the importance of acquisition studies, the importance of reliable, empirical data. Now the revitalization has taken place. Students of language acquisition have been found to answer Professor Leopold's call:

> America offers countless opportunity for observing infant bilingualism in the making. Children in immigrant families and in the Spanish-speaking Southwest often grow up with two languages.... I appeal to the few who are capable of carrying out such an investigation to add sorely needed case histories of infant bilingualism and infant language to the available material, as indispensable spade work for the higher purposes of linguistics. (1945, 11)

This conference is, in a sense, a celebration of the large number of studies that have appeared since 1970, The papers at this conference, the research summaries which have been distributed to you and the studies listed in Table 1 and 2 are the first papers in which empirical, data-based claims about the

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second language acquisition process appear, the first answer to Professor Leopold's call.

Our studies are of many types. The observational studies (Table 1) include reports on the simultaneous acquisition of two languages by infants (e.g., Leopold, Imedadze, Celce-Murcia), studies of young children adding a second (e.g., Huang, Itoh, Kenyeres & Kenyeres) or third (e.g., Murrell, Gough, Chamot) language, studies of older children and adolescents (e.g., Butterworth, Rosansky), and studies of adults (e.g., Shapira, Schumann).

While most of the diary studies are concerned with the acquisition of English as the new language, we have a wide variety of first languages: Spanish, Norwegian, Japanese, German, Arabic, Chinese, etc. Observational data have also provided a base for the study of language mixing and switching (e.g., Oksaar), for conversational analysis (e.g., Peck, Keller-Cohen), and for the pidginization hypothesis (e.g., Schumann).

The questions asked in these studies are many; there isn't time to mention them all here. Yet there are questions that reappear again and again across both observational and experimental studies. The most persistent (though not necessarily my/your favorites) are: 1) Is second language learning the same or different from first language learning? 2) How important is interference/transfer? 3) Is there an optimal age effect for success in second language learning?

In order to compare first and second language data, it is of course, important that the methodology for data collection be fairly comparable. Many of the early longitudinal studies show data collected in 'natural' language sessions, transcribed and analyzed much as in first language studies. That is, spontaneous speech was collected in play sessions every two weeks; the data was transcribed with the learner's speech on the left side of the page and the observer's speech on the right side of the page. The investigator usually decided on some features he wished to compare with first language data (e.g., negatives, questions, NP development, or morphemes); the examples of that form were then pulled from the data on the left side of the page; calculated in terms of percentage correct and then compared to find similarities or differences from those reported for first language learners by such researchers as Brown, Bellugi, Cazden and others. One problem with these direct comparisons was that the 'mean length of utterance' (MLU) which was used to describe developmental stages for first language learners could not be used with second language data. The search for a meaningful index of development for second language learners has been undertaken by Gillis and by Larsen-Freeman. Nevertheless, even though we could not use the MLU to set developmental stages, we could look for overall similarities in the development of negation, question-formation, etc. between first and second language learners of English. Brown and Cazden's students developed a method for careful tabulation of forms produced by the learner, charting these forms across time. Line drawings such as those used by Schumann give us a clear way of looking at similarities/differences in the data of various longitudinal studies.

The early longitudinal studies have revealed some data that is strikingly similar to that of first language research, and they have revealed some data with striking differences as well. The amount of variation from learner to learner is immense. It is also quite likely that the literature on first language acquisition has given an erroneous impression of 'universality' where, indeed, a great deal of variation from learner to learner actually exists. In a previous paper, I tried to pull together data from many of the observational studies to look for similarities among the learners and similarities between first and second

language learners. And certainly similarities exist. I also tried to show that while some children produced language which could be analyzed as a series of clearly demarcated interim grammars, other children showed almost random use of forms without any clear marking of a shift from one rule to the next. For these children, the overlapping of stages --when stages could be discerned-- was extreme. Line drawings such as those exemplified in Schumann give us a way of discerning quick shift in rules vs. gradual sorting out of patterns over time.

Since the literature has emphasized the similarities between first and second language for acquisition of morphemes, negatives, questions, etc., perhaps more interesting are the areas where clear differences between first and second language data seem to exist. For example, large numbers of chunk-learned forms (forms which occur frequently in the speech directed at the child and which he learns as unanalyzed forms) were first noted in Huang's 1970 study. Most of these utterances were strongly tied to repeated actions (e.g., It's time to go. Are you ready? Get out of here!) and were used appropriately with obvious understanding of the global meaning of the chunk. The unanalyzed forms were frequently 'juxtaposed' to use Gough's terminology or 'strung together' to use Fillmore's, giving the impression of advanced syntactic performance. Hakuta has called these chunks 'prefabs' and they are used to build new utterances. It seems, however, that these 'prefabs', 'chunks', or 'formulas' behave like islands. They are incorporated into new utterances but they cannot be operated on for a considerable period of time. That is, they cannot be broken up to allow for do-support, they cannot be moved around during question formation, they are frozen forms. It takes time for them to thaw, break apart and become part of the system on which rules can operate.

Identifying chunks appears to be easy in some data (e.g., Huang). In others, it is difficult to decide which are and which are not chunk-learned segments. For example, it's easy to see that 'I don't know' is a chunk when the learner has no do-support anywhere else and is using no + Verb as his usual negative form. But it is not so easy when the learner has 'I don't know', 'I don't want', 'I don't care', and 'I don't like' and a mixture of no/not + Verb and tag questions with do.

While we assume that chunk-learned utterances are specific to second language learning (where it is possible for the learner to retain large segments of the language), there is now some evidence that this also occurs in first language learning. Labov's paper at the last N-WAVE conference (using scaling techniques) reveals similar data in the learning of question-formation by a first-language learner. At the moment, however, chunk learning appears to be a much more widely discussed part of second language learning than of first.

Researchers using the observational, longitudinal method have been faced with the usual problems of that methodology --first, it's extremely time consuming to collect the data and even more so to transcribe it. Depending on the kind of analysis that is being done this can take ten hours of transcription time to an hour of tape for a rough transcript, to thirty-five hours for fifteen minutes of tape for the kind of fine transcription necessary for conversational analysis. The fine transcript

requires exact notation of the onset and termination of overlaps in conversation, timing of pauses, and in some cases transcription of paralinguistic and kinesic data subscript as well. It takes an unbelievable amount of time and patience. There is also the problem of how many case studies one must obtain before any of the findings can be convincingly generalized. We worry about how much variation among learners can be allowed if we wish to say that general patterns for acquisition exist and are 'real'. Another problem is how representative the first language studies (which are the standard against which we are comparing) actually are (cf., the argument about stages of negation as laid out in both first and second language acquisition studies). Another problem in the earliest studies was insuring an adequate number of instances of whatever form you wished to study. To remedy this, Merrill Swain and Marilyn Adams were among the first to begin to use multiple measures to supplement spontaneous speech data of second language learners. A variety of repetition, translation, Berko-type test adaptations, story retelling tasks, communication game tasks have been used in many observational studies since.

Because of the time required to collect and transcribe data with even minimal accuracy, and because of the success in using multiple measures, many researchers turned to an experimental approach with the hope that looking at many learners at some cross-sectional point in their development might make us more confident of the generalizability of our findings. Experimentation is especially appealing when a number of such 'slices' are collected over time, thus incorporating both acquisition and accuracy. With such a set of slices we can see how accurately learners use a particular structure at any one time and how that accuracy changes over time.

The experimental research (Table 2) consists of large-scale syntactic studies (including those on programs such as the Culver City, OISE, and St. Lambert's studies) where many variables are examined; large-scale testing of specific syntactic structures over various grade levels (e.g., Ramirez & Politizer), and large scale testing of a whole range of skills--phonological, vocabulary, morpheme, syntactic--in various age groups over different periods in their learning process (e.g., Snow). The smaller syntax experiments replicated studies done on first language learners. A number of studies have been done on relative clauses following the work by Amy Sheldon and Doug Brown for first language learners; a number of studies replicating the minimal distance principle work of Carol Chomsky with eager/easy, promise/tell, etc. have been done (e.g., d'Anglejan & Tucker); and small scale studies have also tested particular structures over age ranges (e.g., Plann's study of the acquisition of ART and ADJ agreement for Spanish-as-a-second-language learners).

The third type, the morpheme studies, are perhaps best known because of all the controversy they have caused. Building on morpheme studies of first language learners (Berko, Brown, Cazden and the deVilliers), we hoped to be able to compare morpheme acquisition of second language learners with first. Dulay & Burt, using an instrument which they created, checked the accuracy of morpheme use of child second language learners. They found, first, no important differences between learners from two very different language backgrounds, Spanish and Cantonese. Secondly, they found a very

similar accuracy order for the morphemes used by second language learners to that found by deVilliers & de Villiers for first language leaners. The differences in order, they felt, could be accounted for by the greater cognitive development of the second language learners. They were older. The study, with the same instrument, was then replicated by Bailey, Madden & Krashen and a similar accuracy order was found for adult second language learners. Larsen-Freeman, in a similar study, found reliable correlations for the order of the previous studies on some tasks and not on others for her adult learners. A number of other studies have been carried out, all of them lending some weight to the notion of an 'invariant order' of acquisition of the various morphemes tested.

The morpheme studies seemed to be clear evidence for the $L_2 = L_1$ hypothesis. But there are many problems with the analyses as well as with the methodology used. Rosansky has critiqued the studies from a statistical standpoint. Her conclusions are that the 'invariant order' is a product of the statistical procedures used; that it is not 'real'. (See her paper on this research and her current paper on the frequency argument as well for a more complete description of her findings.) The methodology of the morpheme studies has also been critiqued. Using this methodology, a morpheme is considered 'acquired' if it occurs in either 80 or 90 per cent of the places where it must be used to form a grammatically correct sentence. Gough found, for example, that one could get early appearance of ING in the data of her five-year-old Persian subject, but the method did not show that the child not only used ING in appropriate contexts but also used it everywhere else, for past tense, present tense and even for imperative. (Ravem reports a similar finding for one of his subjects, Reidun.) Gough echoed Mikeš in asking what 'acquisition' means if it does not mean acquisition of function rather than the appearance of a form when the form does not contrast with other forms of its class.

While the picture is not tidy, to say the least, most researchers still believe that central trends can be shown and that these are similar to the trends found in first language acquisition. If we do believe that there is some similarity in the morpheme studies of first and second language learners; if we do believe that there is some similarity in the small syntactic study findings for first and second language learners; and if we do believe that there is some similarity in the general stages in the development of the AUX system, then how do we interpret these similarities? This is the interesting and dangerous part.

Many researchers, believing the data show strong if not exact similarities to first language data, have suggested that this is conclusive evidence for the psychological reality of the earliest model of language learning proposed in opposition to behaviorist claims. That is, they take the position of Language as innate--we come into the world with a Language Acquisition Device; the device is tuned by the input; and the device automatically constructs language anew for the learner. The LAD itself, then, somehow gives us a natural/invariant order of acquisition of these features of the language. A second suggestion is that the strategies used by first

and second language learners are the same. This may be true, though we are not sure just what strategies are to be cited as universal strategies. In an earlier paper I reviewed Slobin's proposed universal principles of first language learning and found them helpful in explaining some second language data but not helpful in many areas.

A third possibility is the frequency explanation. Larsen-Freeman has found that the order of acquisition/accuracy found in the morpheme studies is highly correlated to the frequency of the morphemes in the speech heard by learners. She found that parent language (Brown's data) and in-class teacher-talk of ESL teachers showed a similar rank order for frequency of morphemes as found in the learner output. To examine frequency, we need only 'look to the other side of the page' of our transcripts. Looking at data where input, as well as the learner's speech, has been transcribed, we have also found that the order of acquisition of WH question words appears to directly parallel their frequency in the input. What-questions and where-questions are highly frequent in the input and they are the first produced by the learner. Can- questions precede all other inverted question forms and they are, again, highly frequent in the input. (While there isn't time to consider the issue here in any depth, it may be the case that such forms are really chunks at this point for the learner. If so, the position that the child does not produced can-inversion elsewhere because he can't do both transformations at once is probably wrong. That is, the learner produces Can-questions (e.g., Can I go?) and he produces WH-fronting (e.g., Where my ball?) but he can't produce them together (e.g. Where I can go? How I can finish?). It seems likely that the can-inversion examples are really frozen chunk forms and that WH words are also supplied in initial position on the basis of their frequency and perceptual saliency. That is, the child has not yet learned or acquired either fronting or inversion.)

Another possibility for similar patterns emerging in the production of both first and second language learners is that the rules of conversation shape the exchanges possible between investigators and learners. The child learner calls the adult's attention to very concrete objects and on-going actions. If the first rule of conversation is to make a relevant reply, there are few directly relevant replies and adult can make to such topics beyond identification, location, possession, or ability-type questions. That is, conversational rules put the adult under two constraints as to what is a relevant reply: 1) what information about the topic is shared by adult and child; and 2) what are the attributes of the topic that one can talk about? The range of possibilities is quite small. If the child nominates 'ball' as the topic, the adult can only talk about what/where/whose/what color/can you throw it, etc. He does not ask for the name of the manufacturer nor does he talk about UCLA's current standing in the Pac 8 basketball league. The possible responses contain a high percentage of morphemes usually acquired early (be, be+ING,plurals) and few of those acquired late (past tense, for example). It is possible that the here/now principle and the above rules of conversation might explain the data for child first and second language learners.

In summary, then, the data from first and second language learners may, in fact, be very similar. The experimental studies make it appear so. It is also possible that the similarity that we see is due to data collection methods, to methods of data analysis, to frequency of forms in the input, to rules of conversation which apply in similar ways whenever one speaks to someone with limited language proficiency. The experimental studies, however, show only one side of the picture. The diary studies show us some similarities among first and second language learners, but they also show many differences. They reveal a wide variation in almost every area of language acquisition. It is difficult to visualize two learners with more divergent production than Gough's subject Homer and Huang's subject Paul. If the differences among second language learners are great, we need to know how large the differences are among first language learners as well. That information is not easily accessible. Our procedure in answering the question"does L_2 learning equal L_1 learning" is to look only for similarities. Our method has been to replicate the procedures used in first language learning. If we are seriously interested in the question, then we need to be much more careful in our future research.

The second question relates to the first. If there are strong similarities between first and second language learning, then what role can the first language have in second language learning? The answer to this question has changed over our brief history. At one point, we believed that all errors could be predicted on the basis of contrastive analysis studies. We needed only to look at the differences between the two languages in order to predict where errors would be committed. When this did not turn out to be the case, we went to the other extreme of claiming that interference/transfer was of no importance whatsoever. The evidence has come from many studies. Huang found that contrastive analysis could not predict the forms that his Taiwanese child would use. Hakuta, in looking at the order of acquisition of morphemes of his Japanese child learner, found that articles were not acquired as early as they were by other second language learners. Contrastive analysis could be an explanation of his finding. Ravem's studies have been widely quoted as showing no interference in the English learned by his two Norwegian children. (and, thus, evidence for the $L_2 = L_1$ hypothesis). His data, however, shows that while the negatives and WH-questions are similar to those of first language learners, there is evidence of intereference in Rune's inversion of yes/no questions (e.g., Know you? Like you school?). Ravem concludes that allowance must be made for the active use of the first language in the acquisition of a second language: "There is much in the development of my informants' English which must be viewed as transfer, in the sense of an active use of L_1 knowledge." Butterworth, in his study of an adolescent Spanish informant, says: "If he can be said to use any regular strategies at all, it is that he transferred syntax from Spanish and simplified all kinds of other forms. This left him with 'telegraphic' English speech in Spanish syntax." Anderson, in a paper at this conference, shows how our morpheme studies, (e.g., by considering the article as a single category) have hidden differences which can be accounted for via contrastive analysis.

Graeme Kennedy has suggested that it is unfortunate that we have

created such terms as transfer/interference. He points out that we approach all learning in the light of past learning. We recognize over-generalization of rules in most learning; it is recognized in first language learning. We could, then, think of transfer as simply another example of over-generalization of rules. Our subjects show variation in the amount of overgeneralization they do in their first language learning; why should we not also find varying amounts of over-generalization among second language learners? Some learners might over-generalize a great deal; others might not.

Felix and others have pointed out the need for care in all our claims for and against contrastive analysis. For example, when we find examples of it-deletion in the speech of Spanish learners of English, we claim interference. It-deletion also occurs in the speech of other second language learners (for example in the speech of Homer, the Iranian child, and in Felix's data of American children learning German as a second language). In those cases we claim that it-deletion is a developmental error. Young, in her study of three Spanish kindergarten children learning English, suggests that what we must do is look at the frequency of such errors (sporadic or frequent) and how long they remain in the speech of our learners. Perhaps this will be a more reliable way of distinguishing the source of the error. Schachter has pointed out yet another problem to be solved in the contrastive/error analysis predicament: avoidance of forms which are quite different in the two languages.

Obviously, again, we need to reexamine the data from all our studies in much more detail (and with more open minds) before we can answer the question.

The third theoretical issue that has been looked at in much of the literature is that of an optimal age for language learning. If it is true that children are excellent language learners and adults are not (with some margin for variation among learners in each group), then how can we account for this difference. A number of explanations have been given, three of which I'd like to summarize here. The first is the biological explanation. If I may be excused for oversimplifying due to time/space constraints, the notion is that the child comes into the world not with a blank slate but wired-in capacities for language. These capacities might be captured somehow in a non-monolithic Language Acquisition Device. The Language Acquisition Device (once redundant wiring is gotten rid of and the Device is refined) becomes more set, less plastic, goes downhill, withers away or whatever. At about five, or certainly by puberty, this process is complete and language learning from then on must somehow be accomplished in a different way. This biological argument for second language learning has been modified by Krashen and by Rosansky to include Piagetian cognitive changes. At adolescence, some percentage of the human species goes through a cognitive change. With formal thinking, the ability to think abstractly about things such as language is attained for the first time. The combination of the two changes, biological and cognitive, then, would account for the differences in learning and in learning styles of child and adult second language learners.

A second addition, drawn from the work of Schumann and others, is that the adult learner has to face unusual social and psychological problems when learning a new language. The psychological trauma for the adult in learning a new language is severe. He feels he is treated like a child, or like an idiot, that he is unable to express his true intent in the new language.

In addition, because of his group/language membership, he may be placed in a good or not so good learning environment. He may not have, or he may not even want to have, much contact with speakers of the language. The degrees of difference in terms of psychological and social distance set the stage for a range of fair to poor language learning possibilities for the adult.

A third possiblity, suggested by Gough & Hatch, is that the rules of conversation can account for the difference found between adult and child learners. That is, the child-interviewer data shows that the adult follows the rules of conversation within the boundaries of the here/now principle. Conversations are about objects present in the environment, or they focus on on-going actions. The learner can rely heavily on the environment (non-linguistic) to understand what is said to him (linguistic). The rules of polite conversation require that the input to the learner be simplified in ways mentioned earlier in this paper. In contrast, the adult learner data shows no such limitation on topics. In fact, adults seem to feel it is insulting to talk about obvious shared-information topics. The adult cannot rely as heavily on environmental cues in predicting what will be said to him. Our notion is that these differences can account for the difficulty of the task. Adult learners cannot predict topics, children receive highly predictable and highly redundant topics. The task is more difficult for the adult and he, therefore, has less chance for success in learning the second language.

Each of these explanations can be examined critically. Since Krashen's model, based on the biological/cognitive explanation, is not yet in final form, it is unfair to argue its strengths and weaknesses. I will consider the other two explanations only. The second claim, that of social and psychological distance as an explanation of adult/child success in second language learning, has a problem. That is, we find that most of the diary studies show that young children go through many of the same psychological traumas in learning the new language as do adults. They cry and insist they cannot speak one or the other language. They hide when it's time to go to school. They crawl under tables when it's time to speak the new language. But they are not nearly as successful at completely getting around the learning situation as are most adults. They, too, believe that speakers of the new language are stupid or nasty or that the speakers of that language think the learner is stupid and nasty. There are also instances of social distance. The child learner can be as isolated from adequate contact with speakers of the language as are the adults. Even in schools where there are a large number of speakers of the new language, children often feel socially isolated because of their first language membership.

Psychological and social distance, then, are not peculiar to adults and can be better used, as Schumann intended, to explain variation among learners rather than differences across the age range.

The conversational analysis approach also runs into problems. While interviewer-child language is highly redundant and obvious in the here/now context, Peck has found that child learner /child native speaker exchanges can be highly unpredictable. One of my favorite examples from her language-

play data is the quick leap from talking about puzzle pieces to pishes to pizzas to pepsis to singing the pepsi cola commercial. Obviously, these are not predictable as topic changes. They are, however, predictable in some sense as word plays which focus on phonological change. On the other hand, adult discourse, which we claim is highly unpredictable in terms of topics, can be highly predictable. That is, every foreign student who comes here must soon tire of being asked where he is from, how he likes UCLA, and how long he expects to be here. These topics, at least, get lots of practice and can be counted on by both the learner and the native speaker as 'safe topics' to which one can always revert when the going gets rough. The ability of adults to solicit repairs also guides the native speaker to restate his utterances in more simple forms. For example, the learner can get the native speaker to change WH-question to yes/no questions which include possible answers if he shows that he does not understand. The work on foreigner talk shows that highly complex language will be simplified if the learner is successful in eliciting it. The whole area of adult learner conversation needs much more exploration before we can make strong claims about discourse analysis as an explanation for adult vs. child success in second language learning.

The issue is further complicated in that we are busily trying to explain a difference which may not even exist. The observational studies of adult learners make them appear to be 'non-learners' in terms of morphology, yet the same data shows them to be quite fluent language users. On the other side, we find that some children are also non-learners in much more severe terms. For example, Denise Young's study of Alma showed that after 8 months of exposure to English at school, Alma did not learn English. She was not a 'late bloomer'--that is, the beginning production of language by Alma at the end of 8 months looked much like Young's other subjects' data at the first data-collection session. While adults look like non-learners when we consider morphological markers absent in their speech, children also do not learn the morphology of the second language easily when they are immersed in the second language but without adequate peer models who are native speakers (see Plann's paper on the Culver City project, papers on the St. Lambert's projects, or go listen to children in East Los Angeles). When adequate input from native speakers is not available, language development particularly morphology, suffers whether the learners are children, adolescents, or adults. We find classroom dialects of Spanish in the Culver City project where Anglo children are being educated in Spanish, we have classroom dialects of French for children immersed in French schools, and we have classroom dialects of English in many language classrooms overseas where the learners are adults. Age is not the important variable.

The experimental evaluation projects also show us that our'children are fantastic language learners and adults are not' statements may only be a myth. The Snow study also shows that of the Americans being followed as they learn Dutch in the Netherlands, it is the older 15 to 18 year olds who make the greatest progress in the shortest period of time. They are closely followed by adults. The youngest children (five-year-olds) achieve the least. This is

true especially in syntax and morphology, but is also true for phonology. As the tests are readministered over time, many of the initial differences among age groups wash out. Similar findings have been reported in the Swedish research. Chun has found similar results in her study of Americans learning French in France. She suggests, however, that the younger children may not need the language as much as older learners in order to interact with others. That is, they can play and interact with others even though they know or use little of the new language. Adolescents and adults cannot interact with others on this level and so have a built-in motivation to learn the language quickly.

Again, much more careful work must be done before we can hope to answer the question of age differences as a primary variable in success in second language learning.

I apologize to those of you who must be upset at my giving such important questions such short shrift. But I think that if there is one thing that we have learned from the massive amount of research that has been done in the past seven years it is that the answers which we thought at first were so easy and so clear must be considered much more carefully. Each study brings more data to bear on the questions. When answers are found they won't be simple, but they will surely be much closer to reality than they are at the moment.

In conclusions, we are, I believe, fortunate in one way that it has taken us so long to respond to Dr. Leopold's call for the serious study of second language acquisition. While it has taken us long to respond, much has been done in a short, and exciting, period of time. In the interval between that call and the beginning of serious work on empirical data in the early 70's, we missed out on a period when as Lakoff has said, people had very narrow views as to what could or couldn't be done as linguistic research. We have also missed out on a time when one theory of language acquisition was believed to be 'right' and everything else 'error'. The fact that we have 'breathing room' allows us to look in many different directions. The papers at this conference should show how wide a variety of studies are now being done: studies of discourse analysis, conversational analysis, language play, foreigner talk, language mixing and switching rules, hemispheric problem solving preferences, bilingual aphasia, and many more. And, along with these, the more conventional areas of phonology, syntax and morphology are being looked at in new ways. A glance at the program of this conference should also show that we have no 'one and only' way of approaching research and no 'one and only' way of identifying topics as the only ones of interest. What is clear, moreover, is that we are looking at our research questions more carefully, becoming more critical in our approach to analysis, and hopefully coming closer to understanding how it is that the learner, whatever his age, after a period of inarticulateness, manages to acquire a second language.

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TABLE 1

Observational Studies of Second Language Acquisition (Arranged by Age of Subject)

Subject Name(s)	Age	Languages	Investigator(s)	Year
Hildegard	Complete record, emphasis on first 3 years	English & German	Leopold	1939 - 1949
Douchan	First 2 years	Serbian & French	Pavlovitch	1920
Eta, Ester	First 3 years	Serbo-Croatian & Hungarian	Mikeš	1970
Girl child	First two years	Russian & Georgian	Imedadze	1960
Carlito	1st 3 years	Spanish & English	Maacika	1972
Mario	1st 5 years	Spanish & English	Fantini	1974
Sandra	1st 3 years	Swedish/Finnish & English	Murrell	1960
Louis	1st 3 years	German & French	Ronjat	1913
Stephen	1st 3 years	Garo & English	Burling	1959
Caroline	2;4	English & French	Celce-Murcia	1975, continuing
Michael	3	French & English	Swain & Wesche	1973
Sven	2 - 4	Swedish & Estonian	Oksaar	1973, continuing
Takahiro	2;6 - 3;1	Japanese & English	Itoh	1973
Rebecca	3	English & Urdu	Hansen-Bede	1975
Miki	3	Japanese & English	Yoshida	1976
6 subjects	range 2;6 - 6	Chinese & English	LaMarche	1972
4 Subjects Lars,Inga,Heiko,Brigit	range 3;7 - 7;6 range 3;4 - 9;6	English & German German & English	Wode	1974, continuing
Louisu	5	Japanese & English	Hakuta	1974
Paul	5	Taiwanese & English	Huang	1970
Mart_	5	Spanish & English	Cancino	in progress
Rune, Reidun	6 and 3;9	Norwegian & English	Ravem	1968
Toko,Naija& 2 otherSs	range 4;6 - 8	Several Languages & English	Keller-Cohen	1976, continuing
Julie, Guy	5 and 7	English & German	Felix	1974
Horer	5;11	Assiryian / Persian & English	Wagner-Gough	1974
10 Ss	range 4,11 - 5;9	Spanish & English	Adams	1974
8 Ss	mean age 5;7	English & French	Swain	1972
12 Ss	5 - 7	English & Spanish	Flores / Boyd	1973 / 1974
6 Ss	range 5;6 - 6;6	English & Spanish	Dato	1972
Girl child	6;4	Spanish & French	Tits	1948
Alma,Juan & Enrique	range 5;6 - 6;6	Spanish & English	Young	1974
Lydia	6	Arabic (Egyptian)& English	Rizsk	in progress
Nora, Ana, Juan, Alej, Jesus	5;7, 6;5, 7;3, 6;9, 6;11	Spanish & English	Wong-Fillmore	1976
Eva	6;10	Hungarian & French	Kenyeres & Kenyeres	1923
Akio, Haruo	6;11 and 7;6	Japanese & English	Gillis & Weber	1975
Daniel	7	English & French	Savignon	1974
Ken	7	Japanese & English	Milon	1972
Angel, Wilberto	8 and 5	Spanish & English	Peck	1976, continuing

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31 Ss	range 4 - 9	English & French	Ervin-Tripp	1973
3 Ss	range 7 - 10	Indonesian & English	Isman	1973
3 Ss	unknown	Zaire, Spanish, Arabic(Saudi) & English	Nielsen	1974
5 Ss	range 8 - 15	Spanish & English	Marshausky	1975
Male child	10	French / Spanish & English	Chamot	1972
Male child	12	Arabic (Egyptian) & English	Rouchdy	1970
Jorge	11	Spanish & English	Rosansky	1976
Ricardo	13	Spanish & English	Butterworth	1972
Marta, Chon, Juan, Jorge, Alberto, Dolores	2 children, 2 adolescents, 2 adults	Spanish & English	Cazden, Cancino, Rosansky & Schumann	1975
Female S	10	Arabic (Saudi) & English	Hanania	1974
Ginger	adult	English-& French	Johnston	1972
Rafaela	adult	Spanish & English	Brunak, Fain & Villoria	1976
2 Ss	adult	Spanish & English Vietnamese & English	Schwartz, Brunak & Fain	in progress
Zoila	adult	Spanish & English	Shapira	1975
Wimmi	adult	Punjabi/Hindi/English & Amharic	Gasser	1975
Alberto	adult	Spanish & English	Schumann	1975

TABLE 2

Experimental Studies of Second Language Acquisition

	N	Age/Grade	Languages		Investigator(s)	Year
St. Lambert Project	x	1st grade	English & French		Lambert & MacNamara	1969
	38	1st grade	"	"	Lambert, Just & Segalowitz	1970
	20	2nd grade	"	"		
	30	1st grade	"	"	Tucker, Lambert & d'Anglejan	1972
	10	6th grade	"	"	Bruck, Lambert & Tucker	1975
	x	3rd & 5th grades	"	"	Markham, Spilka & Tucker	1975
	x	Kg, 1st, 2nd grades	"	"	Genesee, Tucker & Lambert	1975
	30	4th & 6th grades			Hamayan, Marlman, Pelletier & Tucker	1975
Culver City Project	x	Kindergarten	English & Spanish			1972
	16	1st grade	"	"	Cathcart	1973
	19	1st grade	"	"	Broadbent	1974
	12	2nd grade	"	"	Lebach	
	14	2nd grade	"	"		1974
	x	2nd grade	"	"	Cohen	1975
	x	2nd grade	"	"	Cohen	1975
	24	Kg to 3rd	"	"	Waldman	1976
	x	Kg to 3rd	"	"	Plann	1976
	40	Kg - 6			Jashni	1976
					Ramirez	

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24	Kindergarten	English & French	Barik, Swain & McTavish	1974
30	1st grade	" "	Barik & Swain	1974
30	2nd grade			
112	1st and 2nd grade	" "	Naiman	1974
40	3rd grade	" "	Swain	1974
			CISE Project	
15	2nd grade	French & English	Hebrard & Mougeon	1975
12	range 6;1 - 8;3	Italian & English	Kessler	1971
55	range 6 - 8 years	Chinese & English	Dulay & Burt	1974
60	" "	Spanish & English		
50	range 5 - 8 years	English & Spanish	Olmstead-Cary	1974
115	Kindergarten - 3rd grade	Spanish & English	Ramirez	1974
18	3rd - 5th grades	Spanish & English	Cohen, Fathman & Merino	1976
32	elementary school	Spanish & English	VanMettre	1972
115	Grades 3, 6, 8, 10	Spanish & English	Johnson	1973
12	3rd grade	Hebrew & English	Bassan	1973
8	adults	Hebrew & English	Bassan	1973
98	5;6 - 8;6	Hebrew & English	Ben-Zvi	1976
188	" "	Spanish & English		
120	6 to 14 years	Korean,Spanish & English	Fathmann	1975[a]
200	6 to 15 years	Mixed & English	Fathmann	1975[b]
144	1,2,3 & 10th grades	English & Spanish (nat.vs.Non-nat.)	Natalicio & Natalicio	1971
16	Elementary grades	Spanish & English	Ramirez & Politizer	1975
21	adults			
30	9 to 11th grades	Spanish & English	Hartford	1975
69	3 yrs. to adult	English & Dutch	Snow	1975
60	8, 11 years & adults	Arabic & English	Hamayan, Saigert, & Larudee	1975
149	high school	English & Spanish	Tran	1972
124	16 - 20 years	English & French	Duteau	1970
50	adult	Czech & English	Dušková	1969
160	adult	English & French	Sodhi	1969
36	adult	Japanese, Spanish, Arabic &English	Heckler	1970
5	adult	Japanese & English	Linde	1971
16	adult	English & Persian	Henning	1973
356	adult	Mixed & English	Oller & Ziadhosseiny	1970
20	adult	Mixed & English	Cook	1973
73	"	Mixed & English	Bailey, Madden & Krashen	1974
X	"	Japanese, Spanish & English	Berthau	1974
24	"	Arabic,Japanese, Persian Spanish & English	Larsen-Freeman	1975
x	"	Mixed & English	Bailey, Madden & Eisenstein	1976
44	"	English & German	LoCoco	1975
48	"	English & Spanish		
60	"	Arabic, Persian, Japanese, Spanish & English	Schachter	1975
25	"	Russian & English	Tanka	1975
40	"	English & French	d'Anglejan & Tucker	1975
20	"	Spanish & English	Taylor	1975
423	"	Mixed & English	Kropf	1975
18	"	Spanish & English	Perkins & Larsen-Freeman	1975
78	"	English & Spanish	LoCoco	1976
10	"	Japanese & English	Dickerson	1976
6	"	Cantonese,Portuguese,Korean & English	Tarone	1976
60	"	Italian & English	Oyama	1976
8	"	Mixed & English	Robbins	1976
3	"	Persian,Korean, Spanish & English	Schlue	1976
38	"	Mixed & English	Stafford & Covitt	1976